

(19) RU (11) 2002632 C1

(51) 5 B 29 D 30/20

Patents and Trademarks Committee
Russian Federation

PATENT SPECIFICATION

(21) 4930186/05

(22) 220491

(46) 11.15.93 Bulletin No. 41-42

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(54) TYPE "R" PNEUMATIC TIRE COVER ASSEMBLY UNIT

(57) Use: In the tire industry during the manufacture of radial covers. Essence of the invention: molding drum rotating shaft is located parallel to the assembly drum rotating shaft on the breaker bracelet (BB) assembly bench. The means for retaining the removed assembly cover are mounted coaxially to the BB assembly bench. The BB and assembled cover transporting means take the form of a moving carriage. The latter has mounted to it an annular latch with release drive. The carriage is set up so that it can move parallel to the BB molding and assembly benches by means of a beam. The beam is mounted so as to enable back and forth movement perpendicular to the BB molding and assembly benches. 1 main claim. 3 illustrations.

The invention relates to equipment the assembly of type "R" pneumatic tire covers, and can be used in the tire industry in the production of radial tires.

Known in the art is a type "R" cover assembly unit comprised of casing bracelet assembly benches, casing assembly benches, breaker-protector bracelet assembly benches, and cover molding and final assembly benches. All benches are situated on a single line, and linked by means for conveying semi-finished products between benches. The molded cover was manually removed from the molding drum removal device.

This type of unit is very cumbersome and complicated, with the means for transporting the bracelets and cylindrical casings from bench to bench being particularly complex. The configuration line used in the unit according to the patent does not facilitate a high productivity.

Known in the art is a unit for type "R" pneumatic tire cover assembly, comprised of casing-winged bracelet assembly benches, mounted coaxially to benches for molding casings with a molding drum, breaker bracelet assembly benches with an assembly drum situated in a single horizontal plane with molding drum, means for transporting billets between benches and means for retaining the removed assembled cover from the molding drum.

The disadvantage to this device is that it has a cumbersome and complicated structural design (the molding bench rotates around a vertical axis in a horizontal plane).

The object of the invention is to simplify the structural design of the unit, which is accomplished by situating the rotational axis of the molding drum parallel to the rotational axis of the bench assembly drum of the breaker bracelet assembly bench, while mounting the means for

retaining the removed assembled cover coaxially to the bracelet assembly bench; and also by having the means for transporting the breaker bracelets and assembled cover take the form of a moving carriage, with a ring latch with release drive mounted thereupon so that it can move parallel to the breaker bracelet molding and assembly benches by means of a beam, which is mounted so as to allow back and forth movement perpendicular to the breaker bracelet molding and assembly benches.

Fig. 1 shows a general plane view of the unit, while Fig. 2 presents a view along arrow A on Fig. 1, and Fig. 3 a view along arrow B on Fig. 1.

The unit consists of a casing-winged bracelet assembly bench 1, a breaker bracelet assembly bench 2, and a casing molding and final cover assembly bench 3. The casing-winged bracelets are transported from the drum of bench 1 to the drum of bench 3 by means 4 that simultaneously serve as a template for border wings. Used to transport the breaker bracelets from the drum of bench 2 to the drum of bench 3 and remove the assembled cover from the molding drum of bench 3 is a means comprised of a ring release latch 5 secured on the carriage 6, which interacts by way of a drive (not specifically shown on the figures) with a directed beam 7, which in turn rests on stationary guides 8 and 9, along which it can be moved back and forth by means of a drive (not specifically shown on the figures).

The removed assembled cover is retained by a means 10 mounted coaxially with bench 2.

The unit is equipped with feeders and rollers.

The unit works as follows. Cover assembly begins simultaneously on benches 1 and 2 with two assembly devices. The casing bracelet is assembled on bench 1, while

the breaker bracelet is assembled on bench 2. Upon completion of casing bracelet assembly, the assembly device inserts border wings in the templates of means 4, which are subsequently moved axially by a corresponding drive on the drum of bench 1, where the casing bracelet stretched over the diameter of the drum is bonded to the wings, whereupon the means 4 together with the bracelet transfer to the drum of bench 3.

The bracelet is here received by the molding drum, and means 4 returns to the initial position (see Fig. 2).

During the described operations, the breaker bracelet assembled on bench 2 is removed via the latch 5 from the drum and shifted to the drum of bench 3, where the casing-winged bracelet has already be mounted. The latch is here made to move axially relative to the drums by means of a carriage 6 on beam 7, and shift between the benches by means of beam 7 on guides 8 and 9.

When both bracelets are at the drum of bench 3, molding of the casing begins, during which the bracelets are joined together, whereupon the casing edges are lapped on the border wings using the corresponding drum mechanisms.

Finally, the assembled cover is removed via latch 5 from the molding drum and transferred to device 10, which pulls the cover from the latch 5 and then transfers it to the transport system bracket, which relays it to vulcanization.

This concludes the work cycle of the unit.

(56) European Patent No. 0067788, Cl. B 29 D 30/08, 1984.
British Application No. 1414019, Cl. B 29 D 17/14, 1974.

CLAIMS

1. A TYPE "R" PNEUMATIC TIRE COVER ASSEMBLY UNIT, comprised of casing-winged bracelet assembly benches, casing molding benches with molding drum situated coaxially thereto, a breaker bracelet assembly bench with assembly drum situated in a single horizontal plane with the molding drum, means for transporting billets between benches and means for retaining the removed assembled cover from the molding drum, characterized in that, in order to simplify the structural design of the unit, the molding drum rotating shaft is arranged parallel to the rotating shaft of the assembly drum of the breaker bracelet assembly bench, and the means for retaining the removed assembled cover are situated coaxially with the breaker bracelet assembly bench.

2. The unit according to claim 1, characterized in that the breaker bracelet and assembled cover transporting means takes the form of a moving carriage, with a ring latch with release drive mounted thereupon, wherein the moving carriage is set up so that it can move parallel to the breaker bracelet molding and assembly benches by means of a beam, which is mounted so as to allow back and forth movement perpendicularly to the breaker bracelet molding and assembly benches.

Prepared by: E. Kriger

Editor: T. Nikolskaya

Technical editor: M.

Morgental Proofed by: N. Korol

Order 3208

Circulation

Signed

"Poisk" Rospatent NPO

113035, Moscow, Zh.-35, Raushskaya nab., 4/5

Industrial Publisher Group "Patent", Ushgorod, ul.

Gagarina, 101